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| 09/537,863 | 03/29/2000 | Osamu Funahashi | 2000 0402A | 7280 |

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EXAMINER

FAULK, DEVONA E

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2644

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/537,863

Applicant(s)

FUNAHASHI ET AL.

Examiner

Devona E. Faulk

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 13, 14, 19, 20, 25, 26 and 31 is/are pending in the application.
- 4a) Of the above claim(s) 11, 12, 15-18, 21-24 and 27-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1,2,4,5,10,13,14,20,25,26, and 31 have been considered but are moot in view of the new ground(s) of rejection.
2. The double patent rejection of claim 1 is withdrawn.
3. Claims 11-12,15-18,21-24, and 27-30 are cancelled.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 1 and 31** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 31 recite "wherein said speaker unit is disposed so that a direction of said speaker unit is opposite to a direction of said passive radiator unit, or in a direction that is opposite to a direction of said passive radiator unit". The phrase after "or" is repetitive of what is recited before the "or". Hence, there is no second option, only one option stated twice.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1,3,6-9,19 and 31** are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (Figure 22; page 1, line 24-page 2, line 16) in view of Funahashi et al. (EP 0 800 330 A2).

Regarding **claims 1 and 31**, the applicant's admitted prior art (Figure 22 – A conventional passive radiator type Kelton speaker system; page 1, line 24-page 2, line 16) discloses a speaker unit (1202; Figure 22); a passive radiator unit (1201; Figure 22); a baffle (1204) on which said speaker unit and said passive radiator unit are directly mounted, said baffle forming a constituent part of a speaker box; and a back plate (1207); wherein said back plate forms said speaker box in combination with said baffle (Figure 22); wherein said speaker unit, said passive radiator unit and said baffle form a first closed chamber (Figure 22); wherein said speaker unit, said baffle and said back plate form a second closed chamber (Figure 22). The applicant's admitted prior art fails to disclose wherein said speaker unit is disposed so that a direction of said speaker unit is opposite to a direction of said passive radiator unit. However, this concept was well known in the art at the time of filing as taught by Funahashi. Funahashi discloses a loudspeaker system having a speaker unit (402; Figure 1) mounted in a reverse orientation relative to passive radiator (column 5, lines 42-51). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Funahashi's concept of mounted in a speaker unit in reverse orientation to the passive radiator in order to reduce unwanted vibration.

Claim 3 claims the speaker apparatus of claim 1 wherein said passive radiator unit is

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mounted on a closed back frame having an opening in one direction of a side of said frame. As stated above apropos of claim 1, the combination of the applicant's admitted prior art and Funahashi meets all elements of that claim. All elements of claim 3 are comprehended by claim 1. Therefore, claim 3 is rejected for reasons given above apropos of claim 1.

Claim 6 claims the speaker apparatus of claim 1 wherein an area of an opening in said baffle is not less than 30% of an effective area of a diaphragm of said speaker unit, said opening connecting a space between said speaker unit and a diaphragm of said passive radiator unit. As stated above apropos of claim 1, the combination of the applicant's admitted prior art and Funahashi meets all elements of that claim. Figure 22 indicates that the opening through which the passive radiator/ diaphragm sits is at least the same size of the diaphragm and that the opening connects a space as claimed. All elements of claim 6 are comprehended by claim 1. Therefore, claim 6 is rejected for reasons given above apropos of claim 1.

Claim 7 claims the speaker apparatus of claim 1, wherein a corner edge of an opening connecting a space between said speaker unit and a diaphragm of said passive radiator unit in said first closed chamber is chamfered or rounded. As stated above apropos of claim 1, the combination of the applicant's admitted prior art and Funahashi meets all elements of claim. Because the passive radiator is not square (see Figure 22), it is obvious that any corner edge of an opening connecting a space between the speaker and diaphragm would have to be chamfered so that the diaphragm can fit properly to the passive radiator. Thus it would have been obvious to one of ordinary skill in the art to chamfer any corner edge to make sure the non-square diaphragm would fit.

Claim 8 claims the speaker apparatus of claim 1, where a semi-circular or arc-shape holder is provided integrally at a vicinity of an opening connecting a space between and said speaker unit and a diaphragm of said passive radiator unit in said first closed chamber, said holder supporting a damper of said passive radiator unit. As stated above apropos of claim 1, the combination of the applicant's admitted prior art and Funahashi meets all elements of that claim. Funahashi further teaches that the passive radiator has a damper and edge (column 5, line 26). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Funahashi's concept of a passive radiator having a damper and edge to better reduce vibration.

Claim 9 claims the speaker apparatus of claim 1, further comprising a diffuser disposed in front of said baffle, and an acoustic opening disposed in a direction perpendicular to a direction of sound radiation from said passive radiator unit. As stated above apropos of claim 1, the combination of the applicant's admitted prior art and Funahashi meets all elements of that claim. Funahashi's Figure 12 further teaches of another embodiment with a diffuser (408) that reads on the claimed matter (column 9, lines 20-30). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Funahashi's concept of a diffuser in order to reflect sound reproduced by the passive radiator.

Claim 19 claims the speaker apparatus of claim 13 wherein said plate portion of said speaker unit is provided with an uneven surface. As stated above apropos of claim 13, the combination of the applicant's admitted prior art and Funahashi meets all elements of that claim. Whether or not the plate portion of said speaker unit has an uneven surface is a matter of design

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choice. Thus it would have been obvious to one of ordinary skill in the art to have the speaker unit have an uneven surface to meet some design specification.

7. **Claim 2** is rejected under 35 U.S.C. 103(a) as being obvious over the applicant's admitted prior art (Figure 22; page 1, line 24-page 2, line 16) in view of Funahashi et al. (EP 0 800 330 A2) in view of Beppu (U.S. Patent 5,621,804).

Claim 2 claims the speaker apparatus of claim 1 further comprising an auxiliary baffle disposed in front of said baffle, and wherein said first closed chamber is formed by said speaker unit, said passive radiator unit and said baffle and said auxiliary baffle. As stated above apropos of claim 1, Funahashi anticipates all elements of that claim. He further teaches of a sub-baffle (406) that splits a space into the front closed cavity (404) and the back closed cavity (405) and a cabinet (407). Figure 1 shows a Kelton type speaker and indicates the sub-baffle is disposed in front of the baffle (403) and it along with the speaker unit (402), passive radiator (401), and baffle (403) forming a first closed chamber. He does not teach of the sub-baffle disposed as claimed. Beppu discloses a sub-baffle (12) disposed between a baffle (11) and a passive radiator unit (drone cone (17)) (Figure 4) (column 5, line 60-column 6, line 10). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to have Funahashi's auxiliary baffle disposed as claimed in order to radiate low-distortion sound.

8. **Claims 4, 5, 10, 14, 25, and 26** are rejected under 35 U.S.C. 103(a) as being obvious over the applicant's admitted prior art (Figure 22; page 1, line 24-page 2, line 16) in view of Funahashi et al. (EP 0 800 330 A2) in view of Perkins et al. (U.S. Patent 6,259,798).

Claims 4, 25 and 26 claim the speaker apparatuses of claims 1, 2 and 3 respectively wherein said passive radiator unit is provided with an edge having a thick central portion

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covering the surface of a diaphragm and a circumference portion integrally formed together. Edges are part of the support system for passive radiators. Funahashi's Figure 1 shows the passive radiator is on top of the diaphragm. Figure 2 shows the passive radiator (401). It is obvious that the edges would have to be thick enough to support the diaphragm. Thus it would have obvious to one of ordinary skill in the art at the time of the invention to have the edge cover the surface of the diaphragm for the benefit of making sure the diaphragm is secure.

Claim 5 claims the speaker apparatus of claim 4, wherein said edge is an up roll type edge. As stated in apropos of claim 4, the combination of the applicant's admitted prior art and Funahashi meets all elements of that claim. Although he does not speak specifically to the type of edge, it would be a matter of design choice. Thus it would have been obvious to one of ordinary skill in the art to have a roll type edge in order to meet design specifications.

Claim 10 claims the speaker apparatus of claim 1, wherein said baffle is provided with heat dissipation slits and a sealing material in a region which makes contact with a bottom plate of said speaker unit. As stated above apropos of claim 1, the combination of the applicant's admitted prior art and Funahashi meets all elements of that claim. Funahashi teaches that the back closed cavity (405) seals sound output from the front of speaker unit (402) (column 4, lines 57-57; figure 1). There is obviously some sort of sealing material present. Perkins teaches of a powered speaker having an aluminum front panel with vents or ports and of a heat sink such as internal webs or fins (column 1, lines 25-34). Heat sinks or heat fins permit better dissipation of heat. Thus it would have been obvious to one of ordinary skill in the art to use Perkins's concept of providing heat dissipation for the benefit of providing for more efficient cooling of the speaker.

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Claim 14 claims the speaker apparatus of claim 1 further comprising a sealing panel wherein said second closed chamber is formed by said speaker unit, said baffle, said back plate and said sealing panel. As stated above apropos of claim 1, the combination of the applicant's admitted prior art and Funahashi meets all elements of that claim. Funahashi teaches that the back closed cavity (405) seals sound output from the front of speaker unit (402) (column 4, lines 57-57; figure 1). Figure 1 indicates one closed chamber that reads on the claimed matter. There is obviously some sort of sealing material present. Perkins teaches of a powered speaker having an aluminum front panel with vents or ports and of a heat sink such as internal webs or fins (column 1, lines 25-34). Heat sinks or heat fins permit better dissipation of heat. Thus it would have been obvious to one of ordinary skill in the art to use Perkins's concept of providing heat dissipation for the benefit of providing for more efficient cooling of the speaker.

9. **Claims 13** is rejected under 35 U.S.C. 103(a) as being obvious over the applicant's admitted prior art (Figure 22; page 1, line 24-page 2, line 16) and in view of Funahashi et al. (EP 0 800 330 A2) in view of Tokura et al. (U.S. Patent 6,686,036) in further view of Perkins et al. (U.S. Patent 6,259,798).

Claim 13 claims the speaker apparatus of claim 1, wherein an opening is provided for exposing a plate of said speaker unit to an outside of said speaker apparatus. As stated above apropos of claim 1, the applicant's admitted prior art meets all elements of that claim. Tokura discloses the concept where the plate of a speaker is exposed to the outside (column 3, lines 35-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use Tokura's concept of the plate of a speaker exposed to the outside in order to facilitate better sound distribution.

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Claim 20 claims the speaker apparatus of claim 13 wherein said plate portion of said speaker unit is provided with heat radiation fins. As stated above apropos of claim 13, the combination of the applicant's admitted prior art and Funahashi meets all elements of that claim. Perkins teaches of a powered speaker having an aluminum front panel with vents or ports and of a heat sink such as internal webs or fins (column 1, lines 25-34). Heat sinks or heat fins permit better dissipation of heat. Thus it would have been obvious to one of ordinary skill in the art to use Perkins's concept of providing heat dissipation for the benefit of providing for more efficient cooling of the speaker.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 703-305-4359. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huyen Le can be reached on 703-305-4844. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

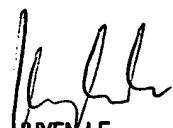
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PRIMARY EXAMINER